**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1 to 38 (Canceled)

39. (Currently amended) A method for finding correspondence between portions of two images comprising the steps of a) subjecting the two images to segmentation by weighted aggregation, b) constructing directed acylic graphs from the output of the segmentation by weighted aggregation to obtain hierarchical graphs of aggregates, and c) applying a maximally weighted subgraph isomorphism to the hierarchical graphs of aggregates to find matches between them[[.]] [[T]] using two algorithms ~~are described~~,[[.]] [[O]]one ~~seeks~~ seeking a one-to-one matching between regions, the other ~~computes~~ computing a soft matching that is an aggregate may have more than one corresponding aggregate,[[.]] and d) [[R]]recovering epipolar lines and camera motion using such correspondences.

40. (Original) Apparatus for finding correspondence between portions of two images comprising: means for subjecting the two images to segmentation by weighted aggregation to obtain full multiscale pyramidal representations of the images, means for constructing directed acylic graphs from the full multiscale pyramidal representations of the images to obtain hierarchical graphs of aggregates, means for applying a maximally weighted subgraph isomorphism to the hierarchical graphs of aggregates to find matches between them using an algorithm that matches between regions, and means for recovering epipolar lines and camera motion using such correspondences.

41. (Original) Apparatus according to claim 40, wherein the algorithm computes a soft matching such that an aggregate may have more than one corresponding aggregate.

42. (Original) Apparatus according to claim 40, wherein the algorithm computes a one-to-one matching between regions

43. (Original) A method for finding correspondence between portions of two images comprising the steps of: e) subjecting the two images to segmentation by weighted aggregation employing a series of coarsening in successively coarser levels, f) modifying the weights in each successive level to incorporate coarser measures of difference between neighboring aggregates based on a measure of difference between their average intensities and by a measure reflecting their motion profiles, and g) recovering at the highest level a representation of the correspondence between the portion of the two images.

44. (Original) A method according to claim 43 wherein the weight is determined according to

$$w_{ij}^{I} = e^{-\tilde{\beta}|I_i - I_j|},$$

where $I_i$ and $I_j$ denote the intensities of the two neighboring pixels, and $\tilde{\beta}$ is a positive constant, and a measure $w_{ij}^{M}$ reflecting the difference in the motion profiles associated to the two pixels.

45. (Original) Apparatus for finding correspondence between portions of two images comprising: a. means for subjecting the two images to segmentation by weighted aggregation employing a series of coarsening in successively coarser levels, b. means for modifying the weights in each successive level to incorporate coarser measures of difference between neighboring aggregates based on a measure of difference between their average intensities and by a measure reflecting their motion profiles, and c. means for recovering at the highest level a representation of the correspondence between the portion of the two images.

46. (Original) Apparatus according to claim 45 further including: means for determining the weight according to

$$w_{ij}^{I} = e^{-\tilde{\beta}|I_i - I_j|},$$

where $I_i$ and $I_j$ denote the intensities of the two neighboring pixels, and $\tilde{\beta}$ is a positive constant, and a measure $w_{ij}^{M}$ reflecting the difference in the motion profiles associated to the two pixels.

47. (Original) A method for finding correspondence between portions of two images comprising the steps of: a) select two images $Im_1$ and $Im_2$, b) prepare for each pixel in $Im_1$ a motion profile, c) assign a weight to each pair of neighboring pixels according to a normalized correlation between their motion profiles, d) perform a coarsening iteration by e) clustering and re-estimation wherein clustering is achieved by selecting a set of seeds such that the remaining elements are strongly connected to this set, and defining the strength of association of a fine element i to a coarse seed k, and wherein re-estimation is achieved for each seed by determining the motion profile of the seed by multiplying the motion profiles of its children, determining whether the seed is peaked or bar-peaked, accumulating adaptively, moments (orders one to four) originated by peaked seeds, and accumulating separately, moments (orders one and two) by bar-peaked seeds, and f) determining motion by selecting a model according to constraints from one of translation, affine transformation and fundamental matrix, determining for each neighboring seeds a distance, and modifying the similarities between neighboring seeds according to the determined distance.

48. (Original) A method for finding correspondence between portions of two images comprising the steps of: a) select two images $Im_1$ and $Im_2$, b) prepare for each pixel in

$Im_1$ a motion profile, c) assign a weight to each pair of neighboring pixels according to a normalized correlation between their motion profiles, d) perform a coarsening iteration to aggregate segments by i. clustering and re-estimation wherein clustering is achieved by selecting a set of seeds such that the remaining elements are strongly connected to this set, and defining the strength of association of a fine element to a coarse seed, and wherein re-estimation is achieved for each seed by determining the motion profile of the seed by multiplying the motion profiles of its children, e) continuing the coarsening iteration until a cluster is detected.

49. (Original) A method according to claim 48, wherein the coarsening iteration determines segments adaptively.

50. (Original) A method according to claim 48, wherein the coarsening iteration uses bottom-up processing to disambiguate motion profiles.

51. (Original) A method according to claim 49, wherein the motion of segments is varied according to a motion model with the level of scale determined by the amount of statistics that appears in each segment.

52. (Original) A method according to claim 51, wherein the motion model varies from translation at fine levels, through affine and projective transformations in intermediate levels to 3D rigid motion followed by perspective projection (characterized by a fundamental matrix).

53. (Original) A method according to claim 48, wherein the coarsening iteration produces a pyramid and motion is determined by combining constraints collected adaptively from different levels of scales in the pyramid.

54. (Original) A method according to claim 48, wherein motion between the images is used to reconstruct a 3D structure of the scene depicted by the images.

55. (Original) Apparatus for finding correspondence between portions of two images comprising a computer processor programmed: a. for selecting two images $Im_1$ and $Im_2$, b. for preparing for each pixel in $Im_1$ a motion profile, c. for assigning a weight to each pair of neighboring pixels according to a normalized correlation between their motion profiles, d. for performing a coarsening iteration by e. for clustering and re-estimation wherein clustering is achieved by selecting a set of seeds such that the remaining elements are strongly connected to this set, and defining the strength of association of a fine element i to a coarse seed k, and wherein re-estimation is achieved for each seed by determining the motion profile of the seed by multiplying the motion profiles of its children, determining whether the seed is peaked or bar-peaked, accumulating adaptively, moments (orders one to four) originated by peaked seeds, and accumulating separately, moments (orders one and two) by bar-peaked seeds, and f. for determining motion by selecting a model according to constraints from one of translation, affine transformation and fundamental matrix, determining for each neighboring seeds a distance, and modifying the similarities between neighboring seeds according to the determined distance.

56. (Original) Apparatus for finding correspondence between portions of two images comprising a computer processor programmed: a. for selecting two images $Im_1$ and $Im_2$, b. for preparing for each pixel in $Im_1$ a motion profile, c. for assigning a weight to each pair of neighboring pixels according to a normalized correlation between their motion profiles, d. for performing a coarsening iteration to aggregate segments by ii. clustering and re-estimation wherein clustering is achieved by selecting a set of seeds such that the remaining elements are strongly connected to this set, and defining the strength of association of a fine element to a coarse seed, and wherein re-estimation is achieved for each seed by determining the motion profile of the seed by multiplying the motion profiles of its children, e. for continuing the coarsening iteration until a cluster is detected.

57. (Original) Apparatus according to claim 48, wherein the coarsening iteration determines segments adaptively.

58. (Original) Apparatus according to claim 48, wherein the coarsening iteration uses bottom-up processing to disambiguate motion profiles.

59. (Original) Apparatus according to claim 49, wherein the motion of segments is varied according to a motion model with the level of scale determined by the amount of statistics that appears in each segment.

60. (Original) Apparatus according to claim 51, wherein the motion model varies from translation at fine levels, through affine and projective transformations in intermediate levels to 3D rigid motion followed by perspective projection (characterized by a fundamental matrix).

61. (Original) Apparatus according to claim 48, wherein the coarsening iteration produces a pyramid and motion is determined by combining constraints collected adaptively from different levels of scales in the pyramid.

62. (Original) Apparatus according to claim 48, wherein motion between the images is used to reconstruct a 3D structure of the scene depicted by the images.